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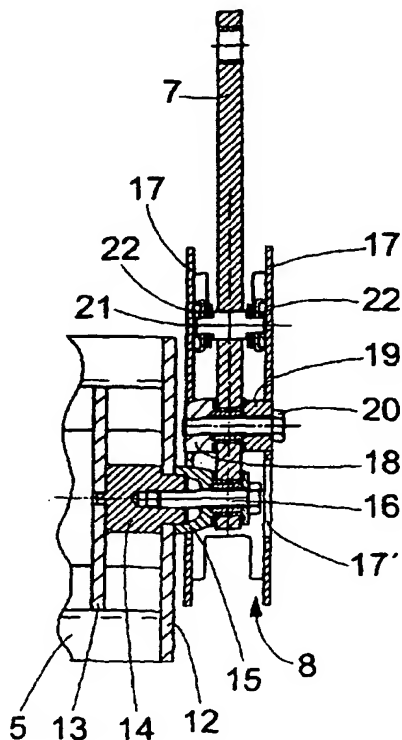
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[Continued on next page]

(54) Title: A BOGIE BRAKE



(57) Abstract: A rail vehicle bogie comprises wheel sets (1) journaled in longitudinal side frames (3) connected by a transverse bolster (4). A bogie brake therefore comprises transverse brake beams (5, 6) with brake actuators (10) and connecting push rods (11); each brake beam having at each end a brake block holder (8) and being suspended by suspension links (7). Each suspension link (7) is pivotably connected to an associated brake block holder (8) at a level substantially corresponding to the center of an associated wheel (2) and at a lower level to its beam (5, 6).

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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

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A BOGIE BRAKE

Technical Field

5 The present invention relates to a bogie brake for a rail vehicle bogie, the bogie comprising wheel sets journalled in longitudinal side frames connected by a transverse bolster and the bogie brake comprising transverse brake beams with brake actuators and connecting
10 push rods, each brake beam having at each end a brake block holder and being suspended by suspension links.

Background of the Invention

Bogie brakes of the above kind are well known in the art. An example is shown in WO 00/02756 from the same
15 applicant. In such a bogie brake, the brake beams are normally suspended at substantially the same height or level as the center of the wheels to be braked. This means that also the push rods are at the corresponding level and in turn that difficulties may be encountered with the
20 presence of the bolster between the two brake beams. The bolster may if necessary be provided with holes for the free passage of the push rods, but such holes are not always a satisfactory solution to the problem.

The main object of the invention is to accomplish a
25 bogie brake, where the push rods may pass the bolster without requiring any holes therein, even if the bolster extends to a rather low level, which is the case for certain bogie designs.

The Invention

30 This is according to the invention attained in that each suspension link is pivotably connected to an associated brake block holder at a level substantially corresponding to the center of an associated wheel and at a lower level to its beam.

35 By this solution, the push rods may pass under the bolster, even if the latter has a considerable height.

In a practical design, side plates of the brake block holder are provided with attachments sockets for receiving an attachment screw, which holds the brake block holder together and pivotably journals the suspension link by a hole therein.

Further, a mounting block is provided at the end of the brake beam, and the suspension link has a hole for a through mounting screw for attachment to the mounting block.

The suspension link is herein pivotably arranged on a mounting sleeve attached to the end of the beam by means of the mounting screw.

An outer side plate of the block holder preferably has an opening for enabling access to the mounting screw.

The Drawings

The invention will be further described below under reference to the accompanying drawings, in which

Figs 1-3 are a side view, a plan view, and an end view, respectively, of a rail vehicle bogie provided with a bogie brake according to the invention,

Figs 4 and 5 are a side view and a plan view, respectively, of the bogie brake according to the invention to a larger scale, and

Figs 6 and 7 are a side view and an end view, respectively, of a portion of the bogie brake to an even larger scale.

Detailed Description of a Preferred Embodiment

As most clearly shown in Fig 2 but also in Figs 1 and 3, a conventional rail vehicle bogie for two wheel sets with wheels 2 has two side frames 3, in which the wheel sets are journalled and which are connected by a transverse bolster 4, to which an underframe (not shown) of the vehicle is journalled.

Referring again mainly to Fig 2 but also to Figs 1 and 3, a bogie brake for this bogie primarily consists of

two brake beams 5 and 6, which are suspended from the
bolster 4 by means of suspension links 7. Each brake beam 5
and 6 is at each end provided with a brake block holder 8
to be provided with a replaceable brake block 9 (Fig 6) for
5 cooperation with the respective tread of the wheels 2.

The first brake beam 5 is provided with two brake
actuators or brake units 10, preferably towards its ends.
Each brake unit 10 is provided with a brake force applying
push rod 11, connected to the second brake beam 6.

10 At the admission of pressurized brake fluid
(compressed air) to the brake units 10 a brake force will
be applied to the wheels 2 via the two brake beams 5, 6,
the push rods 11, the brake block holders 8, and the brake
blocks 9.

15 As is most clearly illustrated in Fig 6, each brake
beam 5 and 6 is mainly composed of a U-shaped plate profile
having stiffening flanges, and the brake units 10 are
attached in the "U" by bolts 10' in the first brake beam 5.
The push rods 11 extend from the brake units 10 through
20 bores in the first brake beam 5. The connection of the
push rods 11 to the second brake beam 6 appears to the
right in Fig 4 but does not form any part of the invention.

Each brake block holder 8 is pivotably mounted to the
end of its respective brake beam 5, 6. This is best
25 illustrated in Fig 7 with the first brake beam 5.

The beam 5 has an end plate 12 and a transverse plate
13. A mounting block 14 is attached to the plates 12 and
13. The suspension link 7 is pivotably arranged on a
mounting sleeve 15, which is attached to the mounting block
30 14 by means of a mounting screw 16. By this arrangement,
the suspension link 7 is pivotably attached to the end of
the brake beam 5.

The brake block holder 8 is mainly built up of side
plates 17, attachment sockets 18, 19 in the side plates,
35 and an attachment screw 20 holding the brake block holder

together and also pivotably journalling the suspension link 7 by a hole therein. The outer side plate 17 is provided with an opening 17' in its lower part for enabling access to the mounting screw 16 for the suspension link 7.

5 The suspension link 7 is also provided with a stub axle 21 with spring-biassed friction rings 22 engaging the inner surfaces of the side plates 17 for keeping the brake block holder 8 in a position accomplished at a previous brake application.

10 The attachment screw 20 for the brake block holder 8 is essentially at the same level as the center of the wheel 2 to be braked, whereas the mounting screw 16 for the suspension link 7 to the beam 5 or 6 is at a lower level. This means that the beams 5 and 6 will be suspended at a
15 lower level than the center of the wheels 2 and accordingly that the push rods 11 will extend at a correspondingly lower level. The effect hereof is - as is illustrated in Fig 3 - that the push rods 11 can extend below the bolster 4 and that accordingly no holes for the push rods 11 in the
20 bolster 4 are required.

CLAIMS

1. A bogie brake for a rail vehicle bogie, the bogie comprising wheel sets (1) journaled in longitudinal side frames (3) connected by a transverse bolster (4) and the bogie brake comprising transverse brake beams (5, 6) with brake actuators (10) and connecting push rods (11), each brake beam having at each end a brake block holder (8) and being suspended by suspension links (7), characterized in that each suspension link (7) is pivotably connected to an associated brake block holder (8) at a level substantially corresponding to the center of an associated wheel (2) and at a lower level to its beam (5, 6).

2. A bogie brake according to claim 1, characterized in that side plates (17) of the brake block holder (8) are provided with attachments sockets (18, 19) for receiving an attachment screw (20), which holds the brake block holder together and pivotably journals the suspension link (7) by a hole therein.

3. A bogie brake according to claim 1, characterized in that a mounting block (14) is provided at the end of the brake beam (5, 6) and that the suspension link (7) has a hole for a through mounting screw (16) for attachment to the mounting block (14).

4. A bogie brake according to claim 3, characterized in that the suspension link (7) is pivotably arranged on a mounting sleeve (15) attached to the end of the beam (5, 6) by means of the mounting screw (16).

5. A bogie brake according to claim 3, characterized in that an outer side plate (17) of the block holder (8) has an opening (17') for enabling access to the mounting screw (16).

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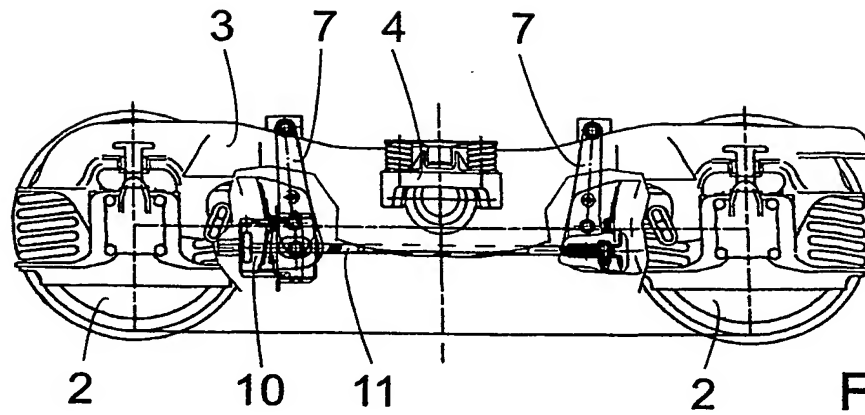


Fig.1

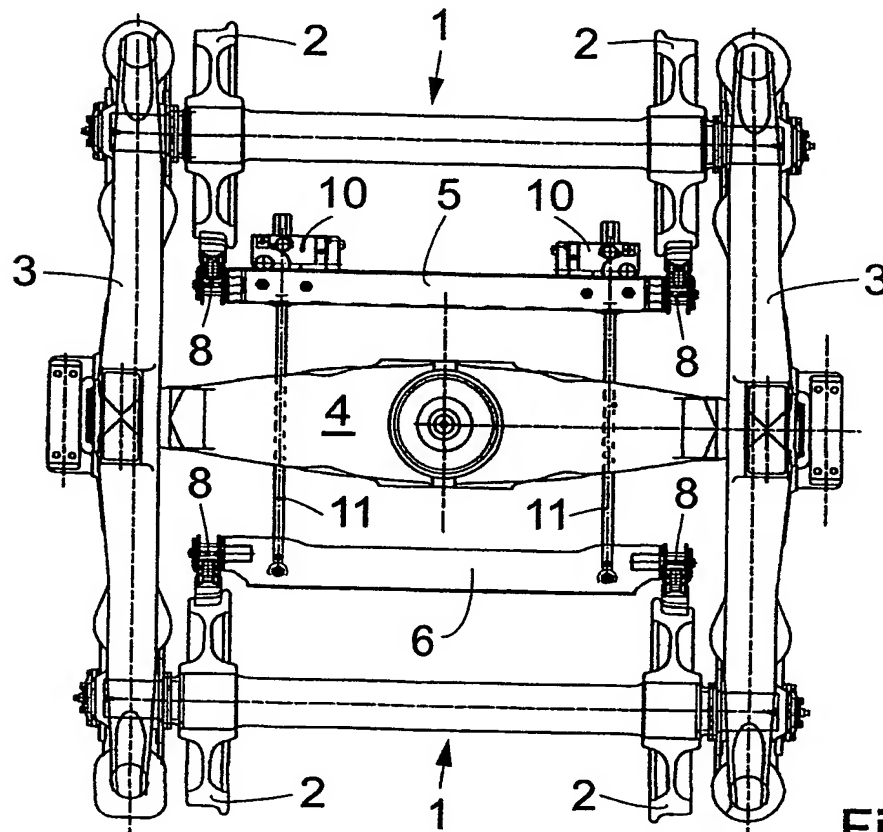


Fig.2

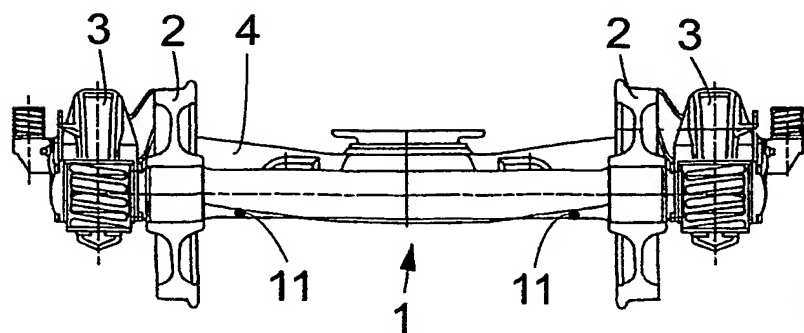


Fig.3

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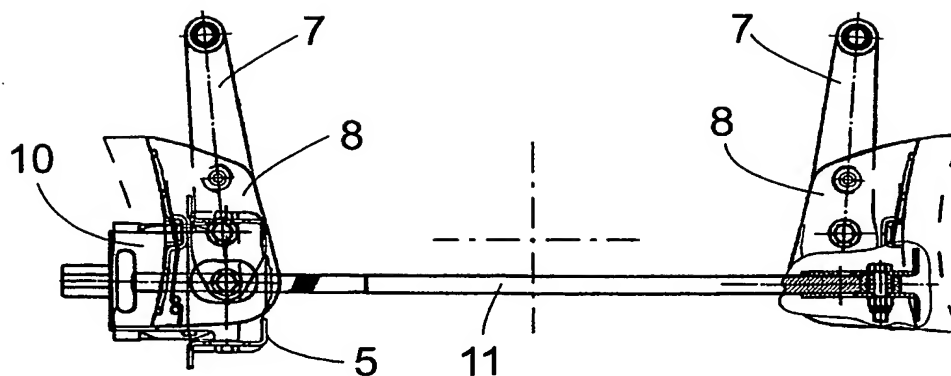


Fig. 4

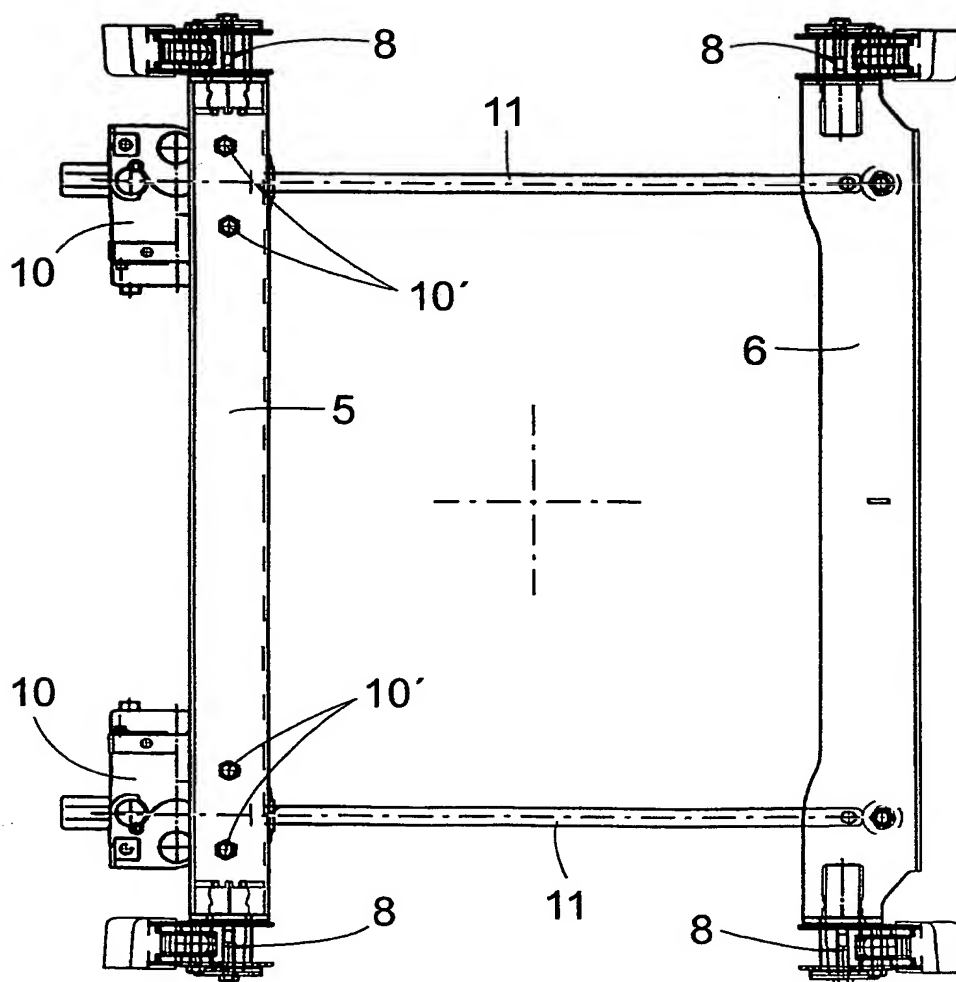
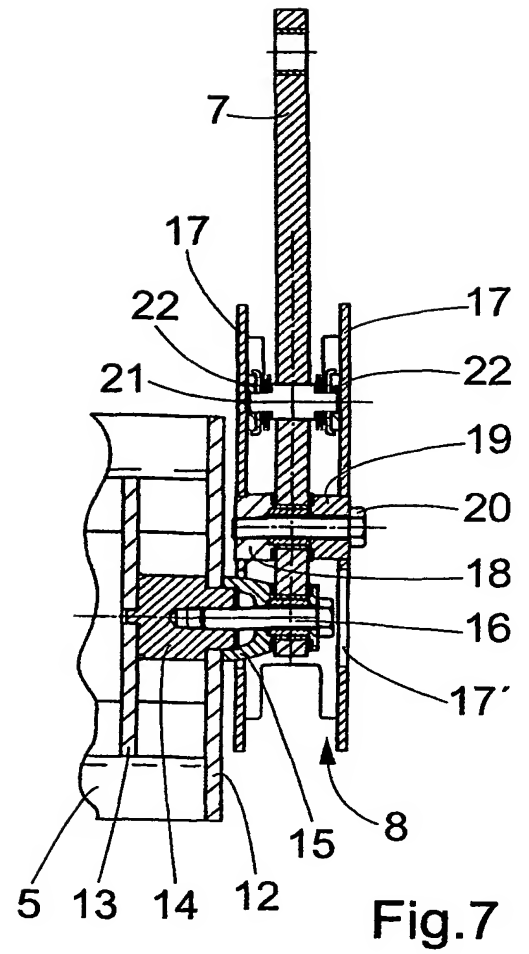
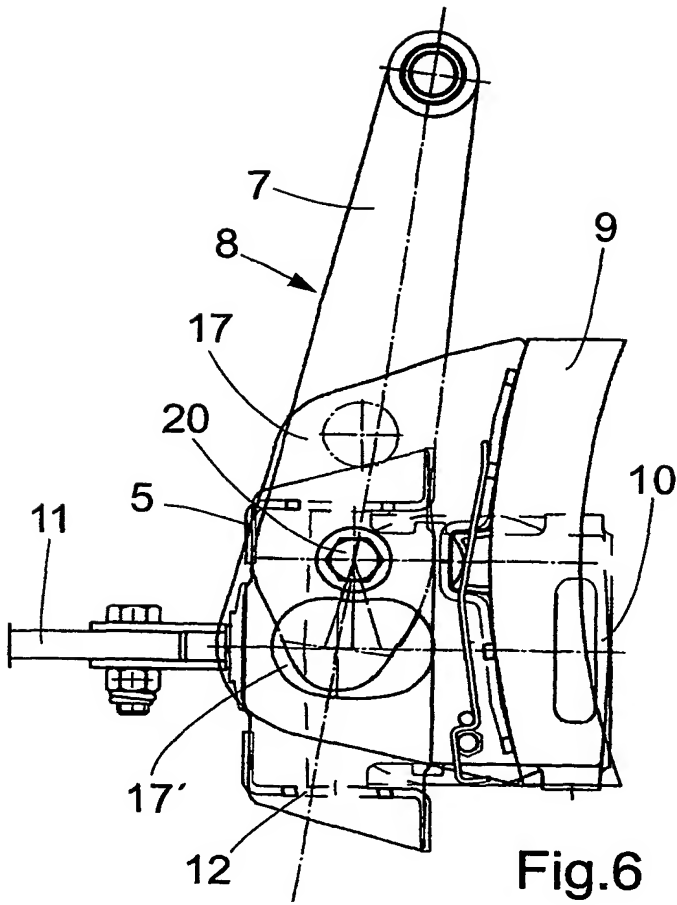


Fig. 5



INTERNATIONAL SEARCH REPORT

International application No.

PCT/SE 02/00452

A. CLASSIFICATION OF SUBJECT MATTER

IPC7: B61H 1/60

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC7: B61H

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE,DK,FI,NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPO INTERNAL, WIP DATA, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 0002756 A1 (SAB WABCO AB), 20 January 2000 (20.01.00) --	1-5
A	US 4211311 A (MCMULLEN), 8 July 1980 (08.07.80) --	1-5
A	US 1474090 A (W.H. SAUVAGE), 13 November 1923 (13.11.23) -- -----	1-5

☐ Further documents are listed in the continuation of Box C.☒ See patent family annex.

* Special categories of cited documents:

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- "E" earlier application or patent but published on or after the international filing date
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- "P" document published prior to the international filing date but later than the priority date claimed

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"X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

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INTERNATIONAL SEARCH REPORT
Information on patent family members

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PCT/SE 02/00452

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